

Contact Information

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Course Information

Lecture: 9:40–10:50 am and 11:20–12:30 Days 135
Room: 173 Peter Engel Science Center
Textbook: *Fundamentals of Physics* by Halliday, Resnick, and Walker, Eighth Edition
Web Site: <http://www.physics.csbsju.edu/200/>

Introduction

This course will continue where Physics 191 left off. We will study electricity and magnetism. Like classical mechanics that was covered in Physics 191, electricity and magnetism are fundamental to the study, though the phenomena they describe tend to be less intuitive than mechanics. Just as in 191, this course will force you to apply the mathematics you have learned as well as the physical concepts you learn in order to solve problems.

Homework Problems

Assigned homework problems for each chapter of the book are included below. Occasionally I will assign extra problems that are not from the book. The problems from each chapter will be due the class day after we have finished covering that chapter in class. A subset of these problems will be graded. You should consider the assigned problems a minimal set of problems to look at. If you are having difficulty with the material, then you should do **more** problems.

Tests

The tests will have two parts: an individual portion and a group portion. The individual portion of the tests will consist of short answer and problems. The group portion of the tests will consist of a more difficult problem that you will solve as a group and hand in one solution. Before each group test, there will be at least one practice group test so that the groups have a chance to learn to work together. The group test will take place on the class period before the regular test. The final test will be solely an individual effort.

All of the tests will be closed book and closed notes. You will be given a sheet with all of the equations and constants that you need for the test, though you will have to remember how to apply them.

Grading

The grades in this class will be based on 7 grades: 3 tests, the final exam, lab, homework, and participation. Homework and each of the 3 tests will be worth 12.5% of the overall grade, while the final exam will be worth 25%, lab will be worth 15% and quiz/participation will be worth 10%. The participation grade will be based on participation in the practice group tests, quizzes, other exercises in class.

Course Schedule

Cycle	Date	Sections	Topics	Tests	Homework	Lab (Days 4–6)
1-1	M 1/14	21.1–6	electric charges		12, 21, 29, 49	
1-3	W 1/16	22.1–5	electric fields		5, 15, 19	
1-5	F 1/18	22.6–9	more electric fields	practice group	25, 37, 49, 57	No lab
2-1	T 1/22	23.1–4	electric flux		9, 15	
2-3	R 1/24	23.5–8	Gauss' Law		17, 27, 40	
2-5	M 1/28	23.9	more Gauss' Law	practice group	49, 73	Field Superposition
3-1	W 1/30	24.1–5	electric potential		3, 9	
3-3	F 2/01	24.6–10	potential examples		15, 21, 25, 37	
3-5	T 2/05	24.11–12	electric potential energy	practice group	67, 105	Equipotentials
4-1	R 2/07	21–24	Review	Group Test 1		
4-3	M 2/11	21–24	electricity	Test 1		
4-5	W 2/13	25.1–5	capacitance		5, 17, 65, 35	Digital Oscilloscope
5-1	F 2/15	25.6–8	dielectrics		45, 53	
5-3	T 2/19	26.1–9	current, Ohm's Law	practice group	5, 10, 21, 33, 53	
Long Weekend						
5-5	M 2/25	27.1–5	single loop circuits		5	Electrical Circuits
6-1	W 2/27	27.6–8	multiple loop circuits		15, 27, 31, 36, 45, 53	
6-3	F 2/29	27.9	RC circuits	practice group	61, 63	
6-5	T 3/04	28.1–4	magnetic fields		5, 81, 11	RC Circuits
7-1	R 3/06	28.5–7	particle in B field		13, 23, 31, 37	
7-3	M 3/10	28.8–10	more magnetic fields		43, 49, 61	
7-5	W 3/12	25–28	Review	Group Test 2		Ohmic & Non-Ohmic
8-1	F 3/14	25–28	DC circuits and \vec{B}	Test 2		
Spring Break						
8-3	W 3/26	29.1–6	B fields and currents		3, 23, 37, 48, 51, 63	
8-5	F 3/28	30.1–4	Faraday's Law		1, 21	Electron e/m
9-1	T 4/01	30.5–8	inductance		31, 39, 41, 49	
9-3	R 4/03	30.9	RL circuits	practice group	54	
9-5	M 4/07	30.10–12	energy of B fields		65, 71, 77	Helmholtz Coils
10-1	W 4/09	31.1–6	LC and RLC circuits		5, 17, 25	
10-3	F 4/11	31.7–8	more RLC circuits	practice group	31	
10-5	T 4/15	31.9–11	power & transformers		45, 60, 63	
11-1	R 4/17	29–31	Review	Group Test 3		
11-3	M 4/21	29–31	\vec{B} fields and AC circuits	Test 3		
11-5	R 4/24	32.1–5	Maxwell's equations		1, 7, 19	AC Circuits
12-1	M 4/28	32.6–11	magnetism		32, 37, 44, 51	
12-3	W 4/30	33.1–7	electromagnetic waves		1, 5, 14, 29	
12-5	F 5/02	21–33.7	Review			Assessment Test
	TBD	21–33.7		Final Exam		